Control and Prevention of Malaria Project (CAP-Malaria)

Year 5 Work Plan

Burma

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ACRONYMS

ACT	Artemisinin-based Combination Therapy
AMRP	Artemisinin Monotherapy Replacement Project
AOP	Annual Operation Plan
ARM	Artemisinin Resistant Malaria
ARC	American Refugee Committee
BCC	Behavior Change Communications
BHS	Basic Health Staff
CAP-Malaria	Control and Prevention of Malaria Project
CBO	Community-Based Organizations
CDA	Community Development Action
CPD-Myanmar	Country Program Director-Myanmar
COP	Chief-of-Party
CPI	Community Partner International
DCOP	Deputy Chief-of-Party
DEAR	Development for Environmental friendly Agriculture and Rural life of Myanmar
DMR	Department of Medical Research in Lower Myanmar
EDAT	Early diagnosis and appropriate treatment
FDA	Food and Drug Administration
GFATM	Global Fund to Fight AIDS Tuberculosis and Malaria
GMS	Greater Mekong Sub-region
GP	General Practitioner
HF	Health Facility
HH	Household
HMIS	Health Management Information Systems
IEC	Information, education, communication
IRC	International Rescue Committee
IPC	Inter-personal Communication
KBC	Karen Baptist Convention
LLIN	Long-lasting Insecticide Treated Net
MNMA	Myanmar Nurses and Midwives Association
MMA	Myanmar Medical Association
MMP	Mekong Malaria Programme
MMP	Mobile and Migrant Population
MMW	Mobile Malaria Workers
MOU	Memorandum of Understanding

NMCP	National Malaria Control Programme
Pf	*Plasmodium falciparum*
Pv	*Plasmodium vivax*
QA	Quality Assurance
QC	Quality Control
RAI	Regional Artemisinin Initiative
RDTs	Rapid Diagnostic Tests
SCI	Save the Children International
SOP	Strategic Operational Plan
TES	Therapeutic Efficacy Surveillance
TMO	Township Medical Office
URC	University Research Co., LLC
USAID	United States Agency for International Development
USP	United States Pharmacopeia
VBDC	Vector Borne Disease Center (Thailand, district level)
VMWs	Village Malaria Workers
VBS	Village Based Strategy
WHO	World Health Organization

1 EXECUTIVE SUMMARY

The USAID | PMI Control and Prevention of Malaria (CAP-Malaria) is a region-wide project that strives for systematic prevention and control of malaria and artemisinin resistant malaria (ARM) in affected regions of Thailand, Cambodia, and Burma, aiming to prevent the spread of multi-drug resistant malaria including artemisinin resistant *Plasmodium falciparum* in the Greater Mekong Sub-region (GMS). In Burma, CAP-Malaria is implemented by University Research Co., LLC (URC) and Save the Children (SCI).

In Burma, CAP-Malaria has been working to address the massive coverage gaps in malaria services in highly endemic areas by working at the community level through village malaria workers (VMWs), mobile outreach services, screening point services, employer-based malaria control programs, and informal private providers, with a focus on areas with high concentrations of mobile and migrant populations and confirmed artemisinin resistant area (Tier 1). The project aims to strengthen malaria service delivery systems through training VMWs, health care providers, laboratory technicians, and local community-based organizations (CBOs) as sub-grantees, equipping them with rapid diagnostics tests (RDTs), microscopes, and anti-malarial drugs, and establishing systems for ongoing supervision. Long-lasting insecticide-treated nets (LLINs) distribution are accompanied by behavioral communication change activities to promote LLIN use, early diagnosis, and adherence to appropriate treatment through Directly Observed Treatment (DOT). To increase the availability of strategic information, CAP-Malaria worked with the Vector Borne Disease Control Division (VBDC) to build up their capability, through supporting on improvement of health system, initiated the network of microscopists, and quality assurance and quality control (QA/QC) of RDTs and artemisinin-based combination therapies (ACTs).

In Project Year 5, there will be phase out of some of the existing activities. Key indicators (mainly "F" indicators) will be assessed. In additional to carrying out prioritized project activities, a significant proportion of efforts will emphasis the completion of the project with assessments of project outcomes and prioritization of which outcomes should be sustained after the project ends, how, and by whom.

The main activities to be sustained and improved are case finding and management activities by volunteered village malaria workers (VMWs)/private providers (PPs) and a minimum of buffer stock of malaria commodities (RDT, ACT and other antimalarial) if necessary, will be handed over to organization identified to be in charge of CAP-Malaria volunteers.

For quality case management, CAP-Malaria will phase out Day 3(+) case management while transition towards more aggressive case management and response in selected villages in Tier 1 areas. Briefly, in selected areas where malaria cases in high or where regular supervision of volunteers is possible, a positive *Pf* cases will elicit reactive case responses which include DOT and identification of cases, LLIN top-up and health education. The strategy is appropriate for

Tier 1 areas to disrupt potential ARM transmission, particularly in the context of declining malaria burden, as this also allowed for project to implement more aggressive measures to identify additional malaria cases.

Note: Day 3(+) case management was initiated in Year 3-4 in selected areas where close monitoring and supervision of VMWs are possible. Briefly VMWs enrolled eligible Pf cases in DOT and prepare slide on day of diagnosis (Day 0), performed DOT (Day 0, 1, 2) and prepare another slide following the last DOT dose (Day 3). Slides are sent to the designated heath facility or CAP-Malaria Office to be read by trained CAP-Malaria microscopists. Patients whose slides remain positive on Day 3 are referred to nearest and hospitals, while Day 3 responses are initiated. These responses include screening of ~40 cases around the Day 3(+) case, LLIN census and top-up, and health education in the village.

LLINs would be re-distributed to high and moderate malarious CAP-Malaria-covered villages (per village-based strategy) that can sustain LLINs coverage for at least two years after the project has ended. Re-distribution of LLINs will be done in villages that received LLINs during Project Year 2 and 3. Interpersonal Communication (IPC) will continue to provide refresher information on malaria education messages.

If necessary, refresher training of the village malaria workers (VMWs) will be conducted in Year 5 to sustain the capacity of volunteers and maintain the quality of services even after the project ends. CAP-Malaria is also exploring capacity needs to assist the NMCP in trainings, strengthening capacity of VMWs in the future.

To increase the availability and use of strategic information, CAP-Malaria worked with the Vector Borne Disease Control Division (VBDC) to increase capability, through supporting improvement of health systems, improving diagnostic services through initiation of Quality Assurance (QA) for malaria microscopy SOPs. These include training and initiation network of microscopists and supporting scheduled monitoring visits to hospital laboratories for monitoring and QA assessment. Within CAP-Malaria projects, a quarterly review of laboratory findings at the local level will build skills in microscopy and draw attention to the importance of vigilant quality control. Strong diagnostic capacity also help ensure quality of malaria control activities, while also help to sustain some activities that can generate strategic information for malaria control such as village-based stratification (VBS) and intensive case findings. CAP-Malaria also pays attentions to the quality of RDTs and artemisinin-based combination therapies (ACTs) used in the program through logistics management systems to ensure proper supplies and forecast, as well as collection of RDTs and ACT samples for quality control check in partnerships with Department of Lower Myanmar Research (DLMR) and United States Pharmacopeia (USP).

In addition, joint supervisory visits conducted by CAP-Malaria with township malaria officials and basic health staff (BHS) in project target areas will provide the opportunity for building trust, continuous monitoring of the quality of diagnosis and treatment, and on-the-job training. In Year 5, this joint supervisory visits will be accelerated to familiarize midwives and BHS on CAP-Malaria's monitoring methods. Other key areas of emphasis include increased engagement of the private sector, cross-border collaboration, and coordination with the Regional Artemisinin

Initiative (RAI) and other stakeholders, PMI partners' coordination, and program support to conduct regular Technical Strategic Group. In Kayin State, Community Health Financing with referral system will be continued through community health groups (CHG).

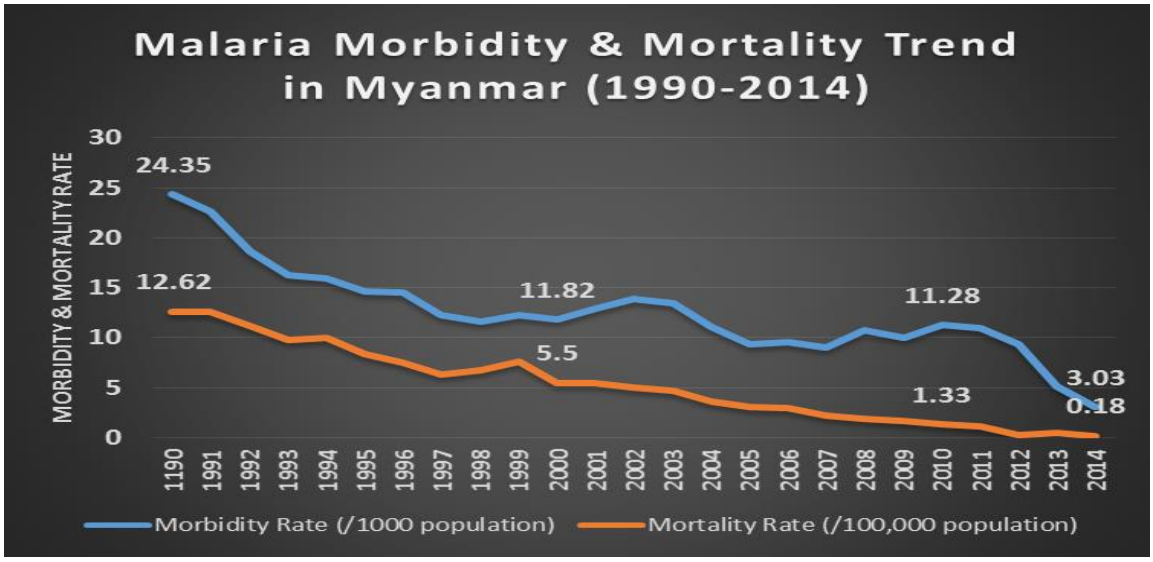
Some activities will be phased out in Project Year 5 including school BCC, BCC through Bus/Boat/Motorbike Taxi system, video show, bill board establishment, World Malaria day, quality testing of RDTs, entomological survey and LLIN monitoring on ownership and usage, and support to CBO (sub-grants) at the end of their existing contract period.

The costed activity matrix is attached in each respective intermediate result narrative section. This narrative provides the rationale and further explanation of upcoming activities including exit and sustainable activities in CAP-Malaria project areas.

2 BACKGROUND AND CONTEXT

In 2011 there were 1.53 million malaria cases in Burma according to WHO World Malaria Report (2012). Around 70% of the confirmed cases are caused by *P. falciparum*. While the number of malaria cases increased in 2002, the hospital admissions due to malaria decreased. The NMCP attributed this to the increased availability of early diagnosis and appropriate treatment (EDAT) at the community level. The morbidity rate increased again after 2007 due to the wide availability of RDTs, and more funding sources which enabled more cases to be diagnosed (Figure 1). Starting from 2010, malaria morbidity rate declined from 11.28/1000 population to 3.03/1000 population in 2014 (73% reduction) and mortality rate were 1.33 and 0.18/100,000 population in year 2010 and 2014 respectively (86% reduction).

Figure 1: Trends in malaria mortality and morbidity in Burma, 1990-2014



Although malaria morbidity and mortality were reduced drastically in most areas, persistence of

malaria burden is seen especially at the border areas, hard-to-reach hot spot areas and among vulnerable population. States and regions along the border areas continue to have the highest malaria burden where the area is not easy to access either due to topography or security. The populations most at risk are those living in these highly endemic areas, especially pregnant women, children, and mobile and migrant populations (MMPs). MMPs are at particular risk because they often 1) lack previous experience with malaria infection, 2) do not know about malaria prevention, diagnosis, or treatment, and 3) have limited adequate access to malaria services. The continuing movement of migrants and mobile workers seeking employment in endemic areas is a challenge for malaria control efforts.

The persistence of the high malaria burden in hot spot and among hot population can be ascribed to a combination of the following factors:

- A relatively large proportion of the population may still live in or near forested areas or have occasionally exposure to forested areas. This is particularly true of most migrant and mobile populations.
- Access to health facilities is difficult.
- Specific malaria control investments have been inadequate, leaving large gaps in finance and service delivery areas.
- Topography and climatic conditions favor for transmission of malaria, and presence of difference species of efficient vectors also enhance the transmission.
- Areas controlled by non-state actors are not accessible by NMCP to provide services, and thus information on malaria situations cannot be obtained for these areas.

The need for sustaining what CAP-Malaria has already achieved in Burma is made more urgent by the evidence that ARM has already spread over most of the eastern part of the country and across much of Upper Myanmar. In Sagaing Region, a high proportion (47%) of *P. falciparum* parasites collected from study sites approximately 25 km from Burma-India border carried K13 propeller mutations, suspected markers for artemisinin resistance. Massive development projects and agri-businesses have resulted in large population movements from non-endemic to endemic areas in search of employment opportunities. Weak infrastructure and limited resources have created large gaps in malaria services. Counterfeit and sub-standard anti-malarial medicines also reduce treatment success and increase drug resistance. To prevent the further spread of drug-resistance, it is not enough to pay attention in Tier 1 areas, but it is increasingly necessary to do intensified malaria control activities all over the countries.

3 GOALS, OBJECTIVES AND STRATEGIES

Goal: Reduce malaria burden (morbidity and mortality) and delay and prevent the spread of Artemisinin Resistant parasites**.**

CAP-Malaria Project Objectives:

1. To increase uptake of malaria preventive services among hard to reach population in CAP-Malaria target areas
2. To increase use of quality malaria diagnosis and treatment among malaria patients in CAP-Malaria target areas
3. To increase use of strategic information for decision making at national and local levels
4. To strengthen malaria control services for mobile populations through inter-agency and inter-country collaboration

The main strategic approaches include:

- Scaling-up cost-effective vector control interventions to reduce malaria transmission;
- Improving the quality and effectiveness of diagnosis and treatment of malaria at the community and health facility levels;
- Supporting to reduce management bottlenecks of the NCMPs and local institutions to implement and monitor malaria control activities; and
- Supporting the establishment and maintenance of strategic information for malaria control.
- Strengthening malaria control services for mobile migrant populations.

In addition to above strategic approaches, implementing the exit strategy and sustainable plan is also highlighted in Project Year 5 strategic approaches.

4 GEOGRAPHICAL AND POPULATION COVERAGE

Figure 2 shows the current project townships. In Year 5, activities will be phased out from all 40 project villages in Munaung Township, Rakhine State based on the following criteria:

- Malaria burden is significantly reduced,
- Easily accessed by our teams, and information about unusual occurrence can be easily collected or timely reported,
- In the case when information about unusual occurrence can be obtained, CAP-Malaria team together with local NMCP team can mobilize to that particular village for investigation and implement rapid responses.

In the remaining project areas, only key activities will be continued in Year 5. Table 1 describes the geographical and population coverage.

Figure 2: CAP-Malaria Project Map in Burma, Project Year 5 (Green area represents Project Year 5 CAP-Malaria coverage)

Table 1: Population Coverage under CAP-Malaria – Year 5 (as of September 2015)

#	Township	Total No. of CAP-Malaria Covered Villages/worksites	Total Township Household 2014 (Source: National Census)	Total No. of HH covered by CAP-Malaria (update on September 2015)	% of Household coverage by CAP-Malaria	Total Township Population 2014 (Source: National Census)	Total Population covered by CAP-Malaria (CAP-Malaria updated on September 2015)	% of Population coverage by CAP-Malaria	Total VMW/PP
1	Bokpyin	67	8,876	5,847	66%	81,505	20,220	25%	33
2	Dawei	57	24,943	5,136	21%	168,082	22,698	14%	33
3	Kawthoung	72	25,481	6,712	26%	139,772	21,730	16%	42
4	Kyunsu	45	32,988	5,057	15%	171,514	27,796	16%	34
5	Launglon	25	25,735	3,157	12%	118,301	16,076	14%	19
6	Myeik	43	54,349	4,641	9%	284,037	22,272	8%	28
7	Palaw	94	18,525	7,269	39%	130,445	34,251	26%	38
8	Tanintharyi	55	19,929	5,871	29%	106,884	29,454	28%	45
9	Thayetchaung	42	22,874	5,720	25%	105,599	29,920	28%	18
10	Yebyu	47	22,073	7,996	36%	100,295	33,256	33%	16
Tanintharyi Total		**547**	**255,773**	**57,406**	22%	**1,406,434**	**257,673**	**18%**	**306**
1	Ann	50	27,359	3,535	13%	119,564	16,416	14%	50
2	Gwa	40	11,245	2,835	63%	42,368	10,247	60%	40
1	Gwa (MNMA)	50		4,206			15,114		50
3	Kyaukpyu	50	37,264	5,902	16%	165,343	24,525	15%	50
5	Ramree	40	22,418	6,003	27%	98,024	24,207	25%	40
6	Thandwe	45	31,075	2,975	10%	133,310	11,578	9%	45
7	Toungup	50	25,239	4,471	18%	114,312	18,106	16%	50
Rakhine Total		**325**	**154,600**	**29,927**	19%	**672,921**	**120,193**	**18%**	**325**
1	Kyauktaga	49	51,648	5,518	11%	250,948	27,370	11%	51
2	Nyaunglebin	35	44,762	4,355	10%	199,709	21,749	11%	45
3	Yedashe	63	50,527	7,305	14%	213,480	30,881	14%	61

Bago Total		**147**	**146,937**	**17,178**	12%	**664,137**	**80,000**	**12%**	**157**
1	Hlaingbwe	69	31,586	5,326	17%	265,622	31,860	12%	69
2	Hpa-an	51	89,197	4,651	5%	421,415	27,800	7%	51
3	Hpa-pun (CDA)	43	6,502	3,555	55%	35,019	21,889	63%	43
4	Kawkareik	40	45,498	2,987	7%	219,692	18,848	9%	40
5	Kyarinseikgyi (KBC)	43	22,040	2,837	13%	254,397	14,567	6%	43
6	Myawaddy	27	41,258	2,652	6%	210,695	11,713	6%	27
Kayin Total		**273**	**236,081**	**22,008**	9%	**1,406,840**	**126,677**	**9%**	**273**
1	Bawlakhe	12	1,589	591	37%	8,562	2,510	29%	12
2	Demoso	63	15,347	5,429	35%	78,990	28,918	37%	63
3	Loikaw	33	26,495	13,096	49%	128,837	71,258	55%	33
Kayah Total		**108**	**43,431**	**19,116**	44%	**216,389**	**102,686**	**47%**	**108**
Grand Total		**1,400**	**836,822**	**145,635**	17%	**4,366,721**	**687,229**	**16%**	**1,169**

(i) Data from National Census – 2014

5 ACHIEVEMENTS TO DATE AND PROGRESS (OCTOBER 2014 - SEPTEMBER 2015)

- **Prevention**
  - A total of 187,069 LLINs were distributed at villages, work sites, ante-natal clinic.
  - As of September 2015, CAP-Malaria supported the distribution of 213,273 USG-LLINs (38.5%) donated to NMCPs from townships to the targeted villages.
  - 145 Community Health Group (CHG) volunteers were trained in inter-personal communication (IPC).
    - One CHG has been set up in each of 193 target villages in Kayin State, as well as Community Referral Fund (CRF) system in 109 villages. The village CRF funds were used to refer 86 patients to the hospitals, including severe malaria cases and pregnant women with malaria.
  - A total of 184,944 people including 35,822 migrants were covered by IPC.
  - For non-IPC activities
    - 6,983 Group health talk sessions were conducted covering 241,415 population including 11,676 migrants.
    - Print material: 380,405 pamphlets and 2,134 posters were distributed
    - Audio/Visual: Video shows during malaria outreach activities in the villages reached an estimated 29,514 people. In addition, video shows were used to deliver key malaria messages to an estimated 225,000 passengers through the private bus and boat systems.
    - School BCC Tool Kits: A rapid assessment was conducted on 440 students selected from 135 schools (total population of 12,996 students) in August 2014 (~10 months after the introduction of school BCC kits). The assessment showed significant improvement in malaria knowledge compared to October 2013. In all, the school tool kits were accessed by the students 20,495 times outside of the classroom.
- **Case Management**
  - Trained 1,297 health workers in malaria diagnostics with microscopy or RDT. Trainees included 572 VMWs and PPs, 725 BHS staff and laboratory technicians.

  - CAP-Malaria provided technical support to NMCP during training of 103 laboratory technicians (Quantitative numbers reported by GF and are not included CAP-Malaria report)

- 1,254 health workers trained in malaria case management with ACT, including 572 VMWs and PPs and 682 BHS staff.
  - Advocacy meetings were conducted with 33 private business representatives from 33 companies operating in 8 townships in Tanintharyi Region.
- 230,317 people were tested for malaria through different approaches (*e.g.* VMWs, screening points/stationary clinics and PPs, mobile clinics and case detection)
- 7,843 cases were positive 7,792 cases were treated and 51 cases were referred to hospitals. Total 7,768 positive cases (99.7% of treated cases) were treated according to National Treatment Guidelines (NTG).
- Day three case management activities were implemented in 12 townships in Tanintharyi Region, Rakhine and Kayin State covering 80 villages and worksites. A total of 413 positive cases completed the Day 3 follow-up (94.9% completion) and among them, 10 cases of Day 3(+) were detected (positive rate 2.4 %)
  - A village-based strategy was used by CAP-Malaria to prioritize 682 villages of Tanintharyi Region and Rakhine State: 272 (39.9%) villages were grouped in the low risk, 243 (35.6%) villages were grouped in the moderate risk, and 167 (24.5%) villages were grouped in the high risk. Appropriate approaches were developed according to the malaria risk.
  - Up to June 20115, Intensive case finding was done in 198 villages of 17 townships. A total of 22,481 people out of 53,220 populations were tested and 923 cases (807 *Pf*, 96 *Pv*, 20 mixed, 4.1% MPR) were identified and treated according to NTG.

During Year 4, CAP-Malaria expanded into new project townships (3 townships in Bago (East) and 3 townships in Kayah) with activities including scaling-up of malaria IPC activities and EDAT services through BHS, Mobile outreach team, VMWs, and private providers.

6 CHALLENGES AND OPPORTUNITIES

Difficulties in findings malaria cases

The numbers of malaria cases have significantly declined possibly as a result of scaling up of malaria control activities. To find additional malaria cases and transmission foci, CAP-Malaria implemented intensive case finding strategy which utilized village wise malaria case report data

from project database together with the national MIS to map out potential malaria hotspots. This strategy allowed CAP-Malaria to expand case find activities into new geographical areas in a targeted manner. The information helps CAP-Malaria and local health departments to be more efficient in prioritizing malaria control activities in resource limited settings.

Implementation of activities in Non-state Actors' areas

Activities to be implemented at Non-state Actors' (NSA) require continuous negotiation. One sub grant had to be terminated due to limitation of access to NSA areas. Some INGOs such as ARC, CPI, MAM, SMRU and Project for Local Empowerment (USIAD|PLE) are based in Thailand and are permitted to work in the areas with approval from the NSA. However, even with permission, access to these areas for project expansion, are still challenging. Very recently, Ministry of Health negotiates with the representative from Non-state actor of Kayin State to implement malaria elimination. In malaria conference recently conducted in US was attended by deputy minister for health, representative from Non state actor and NLD – national league of democracy and others together and had commitment on malaria elimination in Myanmar.

Temporary suspension of activities in Hpa-an, Kawkareik and Myawaddy villages due to armed conflicts

Early in October 2014 and March 2015, unstable security conditions occurred due to conflicts among armed groups in Kayin State which caused interruption for CAP-Malaria field activities. During this period, malaria activities would will mobilize to Hlaingbwe Township to continue malaria services in hard to reach areas of Hlaingbwe Township. Due to armed conflicts in Kayin State, villagers from conflicted affected villages moved to safety areas. Hence, CAP-Malaria has faced difficulties to provide malaria services to those of villagers. On the other hand, CAP-Malaria targeted villages, for example, Mee Zaing Taung Chay/ Hpa-an, were severely affected due to unsecure situation. The mobile migrants and cross-border population are difficult to observed, investigated and follow up, and so this may interrupt the CAP-Malaria strategies and activities especially direct observe treatment intervention.

Flooding in project townships especially in Tanintharyi Region, Rakhine & Kayin state

Due to the monsoon rains during the past rainy season, massive flooding was faced in all project townships of Tanintharyi and Kayin in July & some townships continue in August. Some of the field teams themselves were temporarily stranded in the villages where they were implementing CAP Malaria activities. The massive flooding also affected the main town roads were also blocked more so the roads leading to the villages. Disaster risk management will be done for some of the activities by gathering past information regarding the flood, assessing the risk and vulnerability, identifying possible mitigation measures and developing the plan response to flood. In June 2015, there was a flash flood in Toungup and Ann Townships of Rakhine State, leading to damage of project activities records, LLINs and computer. All CAP-Malaria's damaged properties were recorded and reported. According to assessment by Rakhine State

Health Department, there were over 3,000 Households affected by flood in Ann Township and over 1,000 Households affected in Toungup Township. Around 1,000 families were homeless. Rakhine State Health Director requested support from CAP-Malaria about 30,000 LLINs. Up to now, CAP-Malaria Burma provided 24,500 LLINs.

As precautionary measures, CAP-Malaria has relocated all source documents and malaria commodities to the 2nd floor of CAP-Malaria offices where possible. For offices with a single stories, source documents and commodities (small commodities such as drugs and RDTs) are moved to the upper shelves of secured cabinets. Also, CAP-Malaria also will develop contingency plan to handle future disasters.

Data Management System

IT communication system is not present everywhere and with poor connectivity. Much of the data has been collected without effectively utilize or analysis of the data. Data are mainly used for reporting. Weak in utilization of information at the field operation township level which are collected by themselves. Project staffs are trained on concept of M&E, data management and utilization of data now they are more familiar to use the data. With the guidance from CAP-Malaria Burma, Yangon Team, field MOs are now learning by doing practice.

Community level promotion of ITNs care and use

Low level of LLINs using by the community where adequate LLINs were distributed is one of the challenging issue in some of the project villages. Villagers are still using their ordinary bed nets in spite of distribution of adequate number of LLINs. Strengthening awareness raising on utilization of LLINs and considering impregnation of ordinary nets by KO Tab which were procured during FY13 should be the possible solution. Late arrival of KO Tab for impregnation of ordinary nets can cause difficult field operation during rainy season.

Working with Informal PPs

Most of the PPs in CAP-Malaria were formerly quacks and they were practicing on health care services to the community informally. Those informal PPs were selected and trained in Year 4 and they continued to provide services to the community on case finding and management, assist in LLIN distribution and health education. Supporting PPs include technically, as well as logistical support can contribute towards improving quality of health care services in hard-to-reach areas. Services will target marginalized people where they can receive good quality of health care services free of charge. These services can be sustainable after CAP-Malaria is phased out. CAP-Malaria joins with the private sector in order to cover malaria services more effectively among mobile and migrant workers at risk of contracting malaria.

Mobile /Migrant Population

Some of the mobile/migrant populations are working in hard-to-reach areas where malaria transmission is intense. Their worksites are difficult to identify and even identify it is difficult to provide health care services to these population. Self- medication and incomplete treatment with antimalarial is common practices and create drug resistant problem. Some areas, CAP-Malaria establish the migrant voluntary malaria workers (VMWs) and also work together with informal private sector to provide malaria prevention and control services to these population.

Working with armed forces

There are many arm force units in Tanintharyi Region, Rakhine State and Kayin State; they represent another high-risk groups. Their movement between Tier 1 and other areas can lead to spread of resistant parasite to other parts of the country. Some parts of the townships of Rakhine have very high *Pf* parasite load and if resistant parasite spread to such kind of area, there is more chance of developing resistant. CAP-Malaria Burma has being trying to reduce *Pf* case load by doing intensify case finding and treatment of positive cases.

Forecasting and Quantification of RDT & ACT

At the beginning of the project, it has been difficult to quantify and forecasting of RDT & ACT requirement due to the lack of adequate information and assessment. During Project Year 4 implementation, CAP-Malaria has more data/information to quantify and forecasting of RDT and ACT based on past evidence.

Lack of services apart from malaria

We reduced malaria but still need to maintain activities to prevent resurgence. At the same time, non-malaria fever are being detected by volunteers as indicated by lower MPR. If VMWs are unable to provide treatment or advice on non-services malaria fever, this may effect utilization of VMW in the future. Opportunity to upgrade VMWs with additional skills in basic health services and stronger linkages with HFs for case referrals.

7 COLLABORATION WITH OTHER PARTNERS

To ensure comprehensiveness of malaria data and reduce the wide gaps in service delivery, an important strategy for CAP-Malaria is to engage international and national partners, including both the health and non-health private sectors. Examples of key partners are outlined in Table 2.

Table 2. List of Partners

Partner	Area of Collaboration
John Snow Inc. (JSI)	Procuring LLIN and anti-malarial drugs.
Population Services International (PSI)	Behavior change communication (BCC) – sharing BCC materials for Artemisinin Monotherapy Replacement Project.

Partner	Area of Collaboration
United States Pharmacopeia (USP)	Quality control of anti-malarial drugs
Malaria Consortium (MC)	Support for research activities such as technical advice to MC on Malaria Indicator Survey.
WHO, UNOPS, SCI, Global Fund, other international partners	Proactive Information sharing with WHO, collaborate in exit and sustainable activities during project year 5
Department of Medical Research (DMR)	Quality assurance and quality control on RDT, Data sharing to DMR's data repository.
Local NGOs such as MHAA, KBC, MNMA, CDA	Capacity building activities, as described in scopes of work in each small grants program
State/Regional Health Departments Private-sector practitioners and companies, such as Yuzana Palm Oil.	Coordination up to the township level to develop AOP; Engagement with private practitioners to comply With the National Malaria Treatment Guideline. Linkages with private sector to maximize reach of target populations, such as plantation workers
CBOs including NSA area like Back Pack Health Team, Pact Myanmar (Shaetho Project)	Supporting commodities like LLIN, RDT, ACT and training by CAP-Malaria

8 PROPOSED ACTIVITIES AND JUSTIFICATION

IR1: Use of preventive interventions among population increased in CAP-Malaria target areas

The following are key activities in all the target townships including major development projects (rubber plantation, deep seaport, etc.) and formal cross-border checkpoints. Activities will be measured according to the following indicators:

Indicators (*F-indicators):

- *Number of LLINs distributed that were purchased with USG funds in PMI target areas **(**the number of ITNs purchased by USG distributed will be counted in this F indicator)
- Number of people reached by malaria health education through IPC
- Percentage of local residents in targeted areas who slept under ITN the previous night in CAP-Malaria target areas
- Percentage of migrants in targeted areas who slept under ITN the previous night in CAP-Malaria target areas

Activity 1.1 Community-level distributions of ITNs

a. LLIN distribution

In Year 5, the project covers about 218,000 population living in target villages/worksites. cA target of 109,000 LLINs will be distributed; these nets were procured in Year 4. A total of 5,200 LLINs will be kept in case of disaster or emergency to response to malaria outbreaks. In area where migrant population are common, replenishment of LLIN among new comers are

emphasized. CAP-Malaria will revisit villages in project areas where LLINs were distributed in Year 2 to assess gaps and conduct top-up, as these LLINs may be damaged or lose efficacy.

The distribution costs vary by geographic area and distance and according to past experiences estimate cost per LLIN distribution will be about $0.30 per LLIN.

In Year 5, CAP-Malaria plan to distribute LLINs in high and moderate malaria prevalence villages. CAP-Malaria trains VMWs to distribute LLINs and to mobilize communities with support of project staff. LLINs distribution will include IPC on the use and maintenance (IR1.2), as well as the importance of EDAT. Main reason for not using LLINs was because of hot weather. BCC on important of LLIN utilization for reduction of malaria problem will be provided during LLIN distribution.

b. LLIN purchased with USG funds that will be distributed cost will be borne by CAP-Malaria

PMI/USAID provided 553,500 LLINs to the NMCP to be distributed in high malaria risk townships from selected states/regions in Year 4. Currently, total 213,273 LLINs were distributed in Year 4 and remaining 278,650 LLINs will be distributed in first two quarters of Year 5 with the support of CAP-Malaria: the cost for transportation of LLINs from township to the target villages and the intended users, hiring of (short-term) Field Financial Assistants to assist with logistics and accounting issues. Other resources required for distribution, such as forms and formats, logistic arrangement cost will be shared by NMCP and WHO. These LLINs purchased by USG distributed will be shown in F indicators.

c. Monitoring net coverage and use

CAP- Malaria will continue to conduct quarterly monitoring of net coverage and use in target areas. VMWs, and occasionally health facility staff, will assist in these activities. The budget includes transportation and accommodation costs for joint monitoring visits. The monitoring will track household coverage of LLINs and their conditions, as well as their use of LLIN. Activities will be done concurrently with HE.

Activity 1.2 Community-level promotions of ITN care and use

CAP-Malaria's BCC emphasizes IPC approaches with reinforcement through small media, and community mobilization. The key desirable behaviors to be promoted are: use of insecticide treated bed nets (ITNs), seeking diagnosis and treatment for malaria within 24 hours from trained health care providers, treatment adherence, and avoiding self-medication. In Year 5, IPC will be counted during face to face health education activity, not including group health talk.

a. IPC for bed net use and malaria prevention by VMWs, Private providers, and mobile teams

CAP-Malaria uses a multi-pronged approach to disseminate the same key malaria messages to the target audience such as individual and group sessions, community mobilization during

outreach activities. The approach involves VMWs, and CAP-Malaria staffs. Repetition of messages is effective in ensuring message recall, and more likely to lead to behavior change. More than 1000 volunteers and CAP-Malaria staffs will provide IPC. Cost will include travel and per diem and materials such as pamphlets and posters.

Minimum targets are set for each volunteer. PPs were already trained and advocated and would continue to help spread of BCC messages through IPC.

b. Small media

Reinforcement of BCC messages will be done through the use of information/education communication (mainly pamphlets,). Types and dissemination strategies will be according to the specific target groups. Additional IEC materials will be developed at the end of Year 4 and will be distributed in Year 5. Key messages will be included in development of pamphlets based on entomological findings, gender analysis report, malaria cases among vulnerability groups. Total of 100,000 pamphlets will be distributed. Pamphlets will be distributed during case finding and management, LLIN distribution, and at malaria screening point. The cost will include for mass production of pamphlets, transportation cost to State/Region CAP-Malaria offices.

c. Community mobilization (private companies and community engagement)

c.1. CAP-Malaria has worked with large corporations to organize malaria-focused activities (e.g. diagnosis and treatment, and HE) for their employees and the surrounding communities such as Yuzana Palm Oil Company, Dawei Deep Sea project. In Year 4, most of the Dawei Deep Sea Project activities were stopped due to politico-economic issues, thus interrupting CAP-Malaria activities. CAP-Malaria will galvanize companies through planned advocacy meetings with provide companies and site visits to provide HE to migrant workers in Tanintharyi Region (Kawthoung, Bokpyin, Myeik, Kyunsu, Dawei, Toungup), Kayin State (Hpa-an).

c.2. CAP-Malaria will continue to support patient referral and micro financing through the Referral Funds and Community Revolving Funds in existing 109 sites to help village patients obtain effective treatment in a timely and sustainable manner. This activity will be sustained after the end of the project and will be handed over to local health staff continue to be existed communities. In Year 5, the following activities will be implemented related to the Community Revolving Funds: (i) advocacy on project exit and explore mechanism on sustainability, (ii) Refresher trainings for fund management and (iii) CHG assembly and meeting on final exit. Most of the activity will be led by CHG with support from SCI/ MHAA. CAP-Malaria SCI will support enabling environment for above activities like meeting costs, transportation costs, per diem and etc.

IR 1 ACTIVITY MATRIX: Use of preventive interventions among population increased in CAP-Malaria target areas.

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (Year 5)
IR 1: Use of preventive interventions among population increased in CAP-Malaria target areas								
B1.1 Community Level distribution of ITNs	a.	LLIN distribution (CAP-Malaria)	26 townships	113,000 LLINs distributed (URC -87,800; SCI – 20,000 (18,000 & disaster – 2,000); Disaster reserved -5,200)		-	-	113,000
	b.	Support NMCPs to distribute USG-LLIN (distribution cost)	22 Townships (NMCP/ USAID)	278,650 LLINs. Hire 4 short-term Field Assistants to manage distribution. Monitor by CAP-Malaria Staffs		-	-	278,650 LLINs
	c.	Monitoring on net coverage and net use	26 Townships	Monitoring tool revised	1	1	1	Quarterly in all townships
B 1.2 Community level promotion of ITN care and use	a.	IPC face to face by PPs, Mobile teams, VMWs	26 Townships (URC 25,000 / Q, SCI 10,000 / Q)	35, 000	35,000	35,000	30,000	135,000 *(people reached)*
	b.	Small Media						
		b.1 Distribution of pamphlets	26 townships	*Hire graphic designer for IEC production*	Distribution of pamphlets (100,000 by URC, 40,000 by SCI)			140,000 *distributed*
	c	Community Mobilization						
		c.1. Worksite HE by PP *(private sector engagement)*	Kawthoung, Bokpyin, Kyunsu, Myiek Dawei, Toungup, Hpa-an	7 advocacy meetings with private companies			Dissemination of findings at state/region level	7 meetings
				2,585 migrants	2,585 migrants	1,580 migrants		6,750 Migrants
		c.2. Trained Community - Help Group (CHG)	200 villages in Hpa-an, Hlaingbwe, Kawkareik, Myawaddy		CHG assembly and meeting on final exit			

IR2: Use of quality malaria diagnostics and appropriate treatment increased among malaria patients in target areas

Multiple formats of service delivery have helped to scale-up of community level EDAT and improve accessibility and availability of these services in all remote corners of target areas: screening points, mobile team, and volunteers. Case management conducted through outreach services will be more focused and targeted, while screening points/fixed clinics will be phased down. A key activity has been to accelerate efforts to integrate these community level services by VMWs, PPs, and CHG into the local health systems to sustain malaria control progress. CAP-Malaria will continue to place strong emphasis on quality of case management services through supervision of VMWs and PPs. Supervision will be done by BHS staffs with the support of CAP-Malaria to sustain the activity after the end of the project. Laboratory QA/QC includes QC check of RDT supplies and storage, as well as crosscheck of RDT results with microscopy for selected VMWs as proxy for quality of diagnostic performance.

Training of health workers (e.g. VMWs, project staff, PPs, BHS) will focus on malaria diagnosis and treatment, with additional subjects on logistics management, gender and counselling. Training in Year 5 will include an emphasis to improve understanding and compliance to New Treatment Guideline: updated first line ACT and banning of Artemisinin monotherapy, and DOT protocols for *Pf* and *Pf*-mix infections, second line treatment and referral mechanism, management of mixed infection, management of malaria in pregnant women and infants, stand-by-treatment for migrants, and the use of Primaquine treatment for uncomplicated *Pf* and *Pv*. The latter will focus on monitoring and recognition of potential side effects of Primaquine in patients as their G6PD status are largely unknown.

Note: Under the new National Treatment Guideline, stand-by-treatment is included as a potentially life-saving measures to migrants at-risk for malaria in very hard-to-reach areas where establishment of volunteer system is impossible and drug outlets are not available. In such case, ACT would be provided to the migrants before they depart to their work sites. CAP-Malaria has not include or plan to include stand-by-treatment in project activity.

Mobile team case finding and management activity in low malaria risk villages would be phased down in Year 5, while still focus on LLIN distribution in these villages. In addition, CAP-Malaria will focus on assessment of project achievements, quality control, documentation etc.

Indicators (*F-indicators):

- *Number of health workers trained in case management with ACT with USG funds
- *Number of health workers trained in malaria diagnostics with microscopy or RDT
- *Number of RDT purchased with USG fund that were distributed
- Number of confirmed cases reported in CAP-Malaria target areas
- % service delivery point reported stock out (ACT or RDT) during day of visit

Activity 2.1 Training on malaria diagnosis (RDT & microscopy) and proper case management

a. Training of health workers in malaria diagnostics (Microscopy or RDTs)

b. Training of health workers in case management of Pf patients with ACT and treatment of non-Pf patients

Based on the project information, VMWs and PPs have key roles in reaching at-risk and migrant populations in remote areas with limited access to health facilities. Under CAP-Malaria, selected VMWs and PPs also incorporate DOT into their case management activity to ensure patients with uncomplicated *Pf* to comply with full course of ACT+PQ. In Year 5, PPs and VMWs will receive additional training to enhance their skills in the transition period: key techniques and principles in malaria screening with RDTs (potential differences in RDT kits), key information for patient's record (potential differences in reporting formats and supervision requirements), and updates on new NTGs. Training also include gender sensitization and patient counseling as part of updated SOPs for case management. VMWs and PPs can share experiences to strengthen their network. Refresher trainings are planned in 23 townships for 900 VMWs and 100 PPs (exclude 3 townships of Kayah state where trainings were completed in Quarter 4, Year 4).

Activity 2.2 Supervision on quality malaria diagnosis (RDT)

a. ***Strengthen routine Quality Assurance System (QAS) of RDT***

RDT is used at the community level mostly by VMWs and PPs. To ensure the quality of RDTs under field conditions, CAP-Malaria team pau attention to the transport and storage conditions from storehouse to target villages as part of routine QA. In Year 5, RDT quality will be checked by the Lower Myanmar DMR team by random collection of RDT samples from 1 township from Rakhine, 1 township from Bago and 3 townships from Tanintharyi region will be selected for RDT quality control activity. Results will be shared with relevant partners and to the HF staff and VMWs.

Activity 2.3 Case management and investigation at the facility and community level

a. Support VMWs, PPs and project staffs to conduct EDAT

RDTs are used by VMWs and project staff to confirm malaria diagnosis in order to provide appropriate treatment. Patients with uncomplicated *Pf* cases are treated with first line ACT+PQ, while other species are treated with chloroquine. Selected VMWs will be assigned as DOT providers (link to B 3.3.c). Budget required for this activity include shipping of commodities to townships and villages and operational costs for case finding and management.

In Year 5, another emphasis for CAP-Malaria will be to conduct case investigation of all confirmed malaria cases in areas of low malaria burden to better understand the local malaria transmission contexts. In high malaria areas malaria transmission is mostly locally driven, and

thus priority should be given to strengthening EDAT services and implement more aggressive case finding efforts and case management (e.g. DOT and FU when possible), particularly in Tier 1 areas. Due to technical capacity needs to conduct investigate and extract useful and relevant information to determine transmission foci, CAP-Malaria staff will implement case investigation in Bago region where malaria control has successfully reduced malaria burden.

b. Monthly VMW and Private Providers meeting

Monthly VMWs and PPs meeting (township level) are conducted to monitor performance, collect and verify data, to replenish supply materials and drugs, and to discuss about case management and migrant activities in their community. This is a key opportunity to maintain VMW and PPs engagement and motivation while ensuring quality of service deliver at the community level. These meetings are held at convenient locations depending on the township.

c. Supervision and monitoring on proper case management among Private Provider network

CAP-Malaria has emphasized the engagement of informal PPs who are not yet covered by other organizations, although these informal PPs are most likely the first point of entry into the health system for migrants. In Year 5, refresher training will be provided to PPs who are recruited into the volunteer networks. Similar to VMWs, the PPs roles are to provide case finding and management, to provide HE/IPC to villagers and migrants, and to assist in LLIN distribution. Joint supervision and monitoring visit for data quality improvement by CAP-Malaria and NMCP staff. Lesson learnt will be shared with stakeholders as part of continuous advocacy.

d. Sub-grants to build local capacity in malaria programming

In Year 3, sub-grants were provided to 5 local NGOs: Myanmar Health Assistant Association (MHAA) through SCI, Myanmar Nurses and Midwifery Association (MNMA), Karen Baptist Convention (KBC), Community Development Action (CDA) and Development for Environmental friendly Agriculture and Rural life of Myanmar (DEAR) to expand coverage and build capacity of local NGOs. In Year 4, DEAR terminated its activity due to security reasons in the project implementation areas. The remaining 3 sub-grants activities will finish their contract period in Dec 2015 (KBC) and in May 2016 (CDA and MNMA). Sub-grant activities will continue to be closely monitor through ongoing technical support and supervision by sub-grant manager (CAP-Malaria/URC). Sub-grant staff are given capacity building training such as RDQA coaching. Performance assessment and final reports of small sub-grant projects will be developed by sub grant manager together with sub grantees.

IR 2 ACTIVITY MATRIX: Use of quality malaria diagnostics and appropriate treatment increased among malaria patients in target areas

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (FY16)
IR 2: Use of quality malaria diagnostics and appropriate treatment increased among malaria patients in areas with existing or threatened Artemisinin – resistant malaria.								
B. 2.1 Training on malaria diagnostic (RDT & microscopy) and case management	a	Training on diagnostics (microscopy or RDT)	23 townships (exclude Kayah and phase out villages)	850 VMWs/ 100 PPs (include 150 VMWs under SCI in Kayin)				23 Townships; 850 VMWs/ 100 PPs trained
	b	Training on case management, referral of severe cases						
B2.2 Supervision on QA of RDT and laboratory result strengthen	a.	Conduct quality check of RDT distributed to villages and HFs	1 township each from Rakhine and Bago, 3 Townships from Tanintharyi	Randomly collect RDTs from VMWs and HFs for QC check by DMR Lower Myanmar				
B2.3 Case management and investigation at the facility and community level	a.	EDAT by mobile teams and screening points	All project townships (29 Townships)	Case findings and management of uncomplicated malaria according to NTG				180,000
		EDAT by VMWs						
		EDAT by PPs						
	b.	Monthly VMW meeting, on-job training, monitoring and reporting	All project townships (29 Townships)	78 meetings	78 meetings	78 meetings	52 Meetings (36 monthly for 2 months)	286 meetings
		Monthly PP meeting, on-job training, monitoring and reporting		78 meetings	78 meetings	78 meetings	52 Meetings (36 monthly for 2 months)	286 meetings
	c.	Supervision and monitoring of VMWs on proper case management	26 Townships (not include Hpa-pun Kyainseikgyi, and Munaung)	156 village visits 2 villages per month per township	156 village visits 2 villages per month per township	156 village visits 2 villages per month per township	-	468 visits (URC 324 visits, SCI 126 visits)

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (FY16)
		Supervision and monitoring of PPs on proper case management	26 Townships (not include Hpa-pun Kyainseikgyi, and Munaung)	78 PP visits 1 PP per month per township	78 PP visits 1 PP per month per township	78 PP visits 1 PP per month per township	-	234 visits (URC 171 visits, SCI 63 visits)
	d.	Sub-grant follow-up activities (Continue activities up to end of contractual period).	3 Townships Kyarinseikgyi, Hpa-pun, Gwa	Case finding and management M&E			Final report	3 sub-grants

IR3: Use of strategic information for decision making increased at national, and local levels

CAP-Malaria continues to support health system strengthening and use strategic information. CAP-Malaria supports the joint supervision, monitoring and supervision with NMCP to ensure quality of malaria services and build local capacity. Intensive case finding by mobile team targeting hard-to-reach areas will continue, particularly in Rakhine State; information from Year 4 and MIS will be analyzed to guide the intensive case finding activities

Possible Indicators:

- Percentage of CAP-Malaria service delivery points that experienced a stock-out of first line ACT. (Quarterly)
- Number of joint visits on supervision and monitoring (Quarterly)

Activity 3.1. CAP-Malaria survey and M&E activities

a. Conduct simple end line surveys in project target areas.

CAP-Malaria will conduct simplified end line surveys in target townships by using 3 sampling frames: from Tanintharyi Region (10 townships), Rakhine State (6 Townships) and Kayin State (4 townships). Questions will measure the performance and effectiveness of the project activities, whether the project has met the goal and objectives. Findings will be compared with baseline survey results. Most of the questions are designed to detect rapid changes within project period. (*e.g.* LLIN ownership rate, LLIN utilization rate, changing of positive behavior in relation to malaria prevention and treatment).

b. CAP-Malaria internal RDQA at different levels by Central M&E Team (URC, SCI) and Data Quality Officers

To asses data quality dimensions and strengthen CAP-Malaria M&E system, RDQA has been conducted in all project areas by Central M&E team together with Data Quality Officers (DQOs) at the state/region M&E team. RDQA by Central M&E team are scheduled on a quarterly basis targeting 1 or 2 townships selected based on data quality, while RDQA by DQOs target all their respective townships each quarter. During RDQA, reported data is verified against the original or copied data source and other available data sources. Data from training activity reported in progress reports are verified against copies of participant lists. Compliance to security control of data management system will also be part of the project RDQA activities.

c. CAP-Malaria's 'Online' reporting system.

CAP-Malaria Burma submits all patient records and performance indicators tracking table (PITT) to the Regional M&E team on a quarterly basis. Because of intermittent internet connection, online M&E system will be taken by central M&E team in Yangon.

Activity 3.2 Coordination of strategic information at township and State/Region, and National levels

a. Support health system strengthening for strategic information.

Support Malaria Technical Strategic Group (TSG) meeting

National TSG has an existing structure and terms of reference. It meets quarterly to share information about partners' interventions and discuss malaria data. CAP-Malaria has been working with the WHO and the DOH to support the TSG to ensure that evidence from malaria research and monitoring is used to guide policies and program implementation, and activities by various partners are harmonized. CAP-Malaria is a TSG members and serves as the secretariat for the M&E working group.

Support joint monitoring and supervision visit with BHS staff

Monitoring and supervision visits by CAP-Malaria are done on a monthly basis. This effort is resource intensive and unlikely for local health system to absorb as part of routine activities. In Year 5, quarterly jointly supervision of VMWs with BHS staff are planned to empower and promote local ownership in 21 townships (Tanintharyi Region 10 Townships, Rakhine State 7 townships, Kayin State 4 townships and Bago East Region 3 Townships). During this visit, team monitor VMWs activities and verify reported data. For additional sustainability, these joint supervision visits will be conducted together with other BHS roles including primary health care activities like immunization, maternal and child health services. The community can get more benefit from the joint monitoring visits. During these visits, community can get health education services, treatment services for minor illnesses. Joint monitoring team will pay attention to villages with high malaria caseloads and poor performance VMWs.

Support lab QA/QC

A total of 8 hospital laboratories from 4 townships are covered (50% of hospital laboratory in Tanintharyi region). These hospital facilities are selected in consultation with Region Health Department and NMCP based on accessibility and availability of lab technicians. CAP-Malaria supports the logistic arrangement for cross-checking of slides as part of routine QAS, where all positive and 10% of negative slides (random selection) examined by the township laboratory technicians are cross-checked by the Region senior lab technician (VBDC) or by the NMCP technician with monthly feedbacks and recommendations for further improvement. CAP-Malaria supports the cost for transporting slides from township to Region or Central laboratory, as well as cost for microscope maintenance and lab reagents. In addition to routine QAS, quarterly supervision visits are scheduled to examine other quality criteria of malaria laboratory diagnostic services, to provide on-the-job training, and to advocate for laboratory staff and clinicians to comply with national QA/QC microscopy SOPs and national treatment guidelines, respectively. Financial support for transportation of senior lab technician to conduct supervisory visits to township laboratories are provided. Priority visits can be given to lab technicians with

competency level less than 85% at primary diagnostic facility based on routine QAS. Similar QAS activities within CAP-Malaria project will be maintained to monitor performance of project's laboratory technicians.

b. Quarterly regular staffs meetings at central level

Regular central level staffs meetings will be conducted quarterly at appropriate sites to assess the performance, challenges, suggested solutions and to develop next quarter work plan. During those meetings, additionally capacity of the staffs will be built up such as technical skills improvement, and project management.

Activity 3.3 Access increased to strategic information

a. Update village-based stratification in CAP-Malaria target areas.

Prior to CAP-Malaria projects, Burma micro-stratification was based on factors such as potential for mosquito breeding place, and distance to the nearest health facility, however no malaria case information was used. Therefore, CAP-Malaria developed village-based stratification based on malaria information to identify and prioritize hot spots to better target interventions. Target villages were stratified based on the Malaria Positive Rate (MPR), Annual Parasite Incidence (API) and Annual Blood Examination Rate (ABER). CAP-Malaria develops appropriate intervention package that also takes in to account not only malaria cases but other local factors; such as its remoteness (e.g. cost of transportation, weather, health facility nearby), security and political stability, population (e.g. migrant movement, risk group and life styles), background information on the villages (e.g. existing partners and activities, gaps, private providers, entomological information). Guideline for village-based strategy including appropriate prevention and control package for each strata has been developed.

In Year 5, we continue to categorize villages into three strata to not only guide local implementation, but also to analyze malaria trend in the target villages. The criteria for VBS are in-line with the WHO GMS pre-elimination strategy.

(i) High malaria risk villages – ABER $\geq$10% and MPR $\geq$5%. (Same criteria as advance control phase of malaria elimination).
(ii) Moderate malaria risk villages –ABER $\geq$10% and MPR <5%. (Same criteria as pre-elimination phase of malaria elimination)
(iii) Low malaria risk villages – ABER $\geq$10% and API <1 per 1000 population regardless of MPR value.

The above VBS criteria provided the basis for the development new criteria for NMCP's new micro-stratification which will now include malaria information. Therefore, CAP-Malaria VBS is well-aligned with the currently efforts to revised NMCP's micro-stratification.

Note: CAP-Malaria has been providing technical assistant to NMCP on the new micro-stratification efforts including development of guideline for data collection and criteria for stratification adopted by NMCP.

b. Monitoring stock out of first line ACT

To reduce case load and prevent severe malaria and un-necessary deaths due to malaria, an uninterrupted supply of first line ACT should be assure at the service delivery points down to the VMWs in the villages. Monthly monitoring on stock out at service delivery point will be conducted and rapid replenishment of ACT will be done by project staffs.

c. Mobile Team Case Finding and Management of malaria in hard to reach areas

Some areas are very difficult to reach and not possible to go regularly due to high transportation cost or lack of appropriate mechanisms to communicate with VMW for routine monitoring and supervision. Some villages lack appropriate roads, cut off for several months during monsoon season, or require thousands of dollars to reach. The village-based strategy has identified about 60 high transmission villages that are distributed in all target townships. In such settings, the appropriate interventions and cost-effective solution for the project include scheduled outreach by mobile team to conduct case finding and management activities (regardless of fever or malaria symptoms) and treatment of positive cases according to NTGs. In the GMS Malaria Elimination Strategy Guideline, one of the recommended strategy include the Mobile Team Case Finding and Management to reduce malaria in high transmission area. . In addition to finding more individual with malaria cases, this activity also contribute to further reducing malaria transmission in hard-to-reach hot spot areas.

d. Dissemination of information

Semi-annual, annual reports, survey findings will be distributed to all partners. SOPs, training module, pretest/posttest, instruction, user guides and relevant tools will also be disseminated.

f. Dissemination of exit strategy and discussion at the national level

Discussion with NMCP & stakeholders on sustainability options including hand over of VMWs will be conducted in Quarter 1 and implemented by Quarter 3. Discussion and planning meeting will include stakeholders from different levels – NMCP/Department of Public Health, State/Region Public Health directors, Township Medical officers from project Townships and key implementing partners. USAID Mission (Burma) and donor organizations will be engaged. During these meeting, CAP-Malaria will describe project achievements against targets and objectives, what the challenges were, and handover activities to National program and implementing partners. Relevant documents will be shared.

g. Training on Gender Integration.

Based on the findings of gender analysis conducted in Year 4, training to integrate gender related issues in malaria control program activities will be conducted at all levels. Three participants

from Burma participated the Training of Trainers (ToT) workshp in Cambodia in September 2015. In-country trainings will be carried out at different levels. At the Central levels, all medical officers (both from URC&SCI) and high level MHAA staffs will be trained by ToT, the medical officers and high level MHAA staff will provided gender sensitization to VMW/PP during refresher training planned in Year 5.

h. Compilation of entomological findings

In Year 4, entomology surveys were conducted in 4 sites of Tanintharyi region and 4 sites of Rakhine state. Those data will be combined, analyzed and reported in Year 5.

IR3 ACTIVITYMATRIX: Use of strategic information for decision making increased at national and local levels

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (Y5)
IR 3: Use of strategic information for decision making increased at national and local levels.								
B3.1 CAP-Malaria survey and M&E activities	a.	End line household survey in new target areas	Tanintharyi Region, Rakhine State, Kayin State (3 Sampling Frames)	Developed and produced questionnaires, Hiring and training of data collectors, field data collection and monitoring, data compilation, entry and analysis			Findings analyzed and shared	3 Sampling Frames
	b.	Routine DQA by central M&E team	All project areas (26 townships exclude sub-grants)	1 visit (1-2 townships)	1 visit (1-2 townships)	1 visit (1-2 townships)	DQA reports	3 visits (3-6 townships)
		Routine DQA by DQOs		26 visits	26 visits	26 visits	26 visits	4 visits
	c.	CAP-Malaria online reporting system	Data from 26 townships	Monthly data collection from township level using online M&E format				1 *Online system*
B. 3.2 Coordination of strategic information at township and State/Region, and National levels	a	Support health system strengthening for strategic information						
	a.1	Support Malaria TSG meetings, and other technical meetings. Trainings support for staff and counterparts (including support to USAID trainings and meetings)	National	TSG quarterly reviews conducted. M&E activities as assigned to CAP-Malaria Technical meeting and PMI Partners' meeting quarterly and malaria related training cost supported to NMCP through USAID/Burma				8 *Meetings and 2 trainings*
	a.2	Support joint monitoring and supervision visit (and mobile activities) with BHS	All project townships	Developed quarterly monitoring plan and schedule, Quarterly monitoring and supervision joint visits with BHS according to the supervision plan				63 *Quarterly joint visits in 21 townships*
	a.3	Support lab QA/QC	8 township health facilities in 4 townships in Tanintharyi	Support lab QA/QC in 8 township HFs				8 *Township Hospitals under QA/QC*
	b.	Quarterly regular staffs meeting at central level	All target townships	Quarterly regular staffs meeting including one re-treat meeting				3 meetings

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (Y5)
B3.3 Access increased to strategic information	a.	Up-dating of village based stratification in CAP-Malaria target areas	All project townships	Up-dating villages based malaria situation. Implement prevention packages according to strategy				1 *Village-based classification*
	b.	Monitoring stock out of first-line ACT and RDT at CAP-Malaria service delivery point	All VMWs	monthly monitoring on stock out of first-line ACT at service delivery points				Stock out <5%
	c.	Mobile Team Case Finding and Management in high malarious areas	60 villages in remote, hard to reach areas	Training on Mobile Team Case Finding and Management	60 villages	60 villages		120 Mobile Team Case Finding and Management sessions
	d.	Dissemination of information	Relevant stakeholders and public	Dissemination of semi-annual reports, gender analysis study report, survey reports/peer review publication and presentation				3 times
	f	Dissemination of exit strategy and discussion with NMCP at the national level	Two times at the national level with participants from all levels	1 time		1 time		2 times
	g	Gender Issue	Training on Gender assessment, Gender analysis, and Gender audit at all levels.	Hire Consultants, Develop Training curriculum and modules, SOPs, job aids and tools on Gender and counselling	Training on curriculum and modules, SOPs, job aids and tools on Gender and counselling Issue for (i) Medical Officer or Team Leader (URC & SCI) (ii) CAP-Malaria field staffs (Township level), These staff will provide trainings for VMW/PP			One TOT training in Yangon Six trainings at District level
	h	Compilation of entomological findings	8 sites of Tanintharyi and Rakhine	Data compilation, analysis and report writing				1 report

IR4: Malaria control services for mobile populations strengthened through interagency and inter-country collaboration.

CAP-Malaria supports the strengthening of the NMCP, State/Regional, and township malaria in implementing malaria control. This includes support for technical assistance, supplies and equipment, emergency response, twin-cities collaborative activities, program management, and technical capacity building. Advocacy meetings will be conducted on exit strategy of CAP-Malaria Burma for sustainability of activities including services for mobile population

Possible Indicators:

- Number of twin-city pairs that develop implement a joint action plan quarterly.
- Percentage of Twin-city joint work plans implemented

Activity 4.1 Enabling environment strengthened

a. Disaster risk management

Disaster risk management training was conducted in Year 4 for CAP-Malaria staff as part of the responses to flash floods in the project areas in effort to minimize future events and potential disruption of project activities.

CAP-Malaria may be requested by the NMCP to provide ad hoc and emergency assistance in which the program will respond as appropriate, such as investigation of outbreaks and responses to natural disasters. This allows the project to support the national health system through targeted assistance and support community needs, and to minimize potential for malaria outbreak or reintroduction as a result of disruption of malaria services.

b. Advocacy meeting on Exit Strategy of CAP-Malaria Burma for involvement of other agencies to sustain CAP-Malaria activities including covering migrant populations.

Advocacy meetings on Exit strategy to not only NMCP/Department of Public Health but also state/region level and township levels will be conducted. Also, not only NMCP staffs but also respective stakeholders such as CHAI, GF-RAI and etc. will be invited to participate and advocated on

- Ensure communication of program outcomes; and
- Encourage host governments' commitment and potential donors' resources (RAI project, CHAI, etc.) for the sustainability of the program (Volunteers, accelerated prevention and control activities); and
- Engage senior staff from the Department of Public Health on policy issues to ensure continuation of programmatic interventions.

Activity 4.2 Country level support and coordination to increase cross border twin-city collaboration

CAP-Malaria shares the vision of health ministries in Burma and Thailand on twin-city model to strengthen collaboration on cross-border health, particularly for malaria. Kawthoung-Ranong Working Group meets regularly to develop and update on the implementation of joint work plan (*e.g*. data sharing, malaria screening at border-crossing points, HEs and community mobilization activities. The project will scale-up activities by exploring mechanisms to improve case referral and follow-up among cross-border migrants. Exchanges between pairs of Kawthoung-Ranong twin-cities pairs may be continued in Y5 to shared experiences and lesson learned. Based on experiences during project period, Twin-cities activities case study report will be developed for dissemination. In Project Year 5, CAP-Malaria will transition toward more technical assistant role to monitor continuation of activities. Additional resources will be needed. Since Project Year 4, CAP-Malaria has been able to leverage additional resources form GF-TB, GF-HIV/AIDS, and GF-RAI. CAP-Malaria plan to encourage continued support from other donors and programs to sustain twin-cities activities as part of exit plan.

IR4 ACTIVITY MATRIX: Malaria control services for mobile populations strengthened through interagency and inter-country collaboration

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (FY16)
IR 4: Malaria control services for mobile populations strengthened through interagency and inter-country collaboration.								
B4.1 Enabling environment strengthened	a.	Respond to unforeseen local requests related malaria control	All project areas and areas which were requested by NMCP	Training and planning on disaster risk management	Development of work plan on disaster risk management including LLIN distribution (5,200)			
	b.	Advocacy meeting on Exit Strategy of CAP-Malaria Burma at the state/region, and township levels	4 State/Region level	4		4		8 *Local advocacy meetings*
			23 Township (exclude subgrant townships)		23			
B4.2 Country level support and coordination to increase cross border twin-city collaboration	a.	Country level support and coordination to cross border twin-city collaboration	*Ongoing*: Kawthaung-Ranong	Development of bi-annual work plan Implementation of twin city activities Twin-city malaria working group *e.g.* Share information, training, BCC, malaria week				3
	b.	Develop case study report on twin-cites workshops	Burma					1

9 PROJECT M&E

CAP-Malaria updated the M&E plan in response to PMI/USAID recommendations. The list of performance indicators has streamlined, with a greater emphasis on outcomes. The F-Indicators are measured according the work plan.

There are 2 levels of internal RDQA. First level of RDQA is conducted by the DQOs such that all townships should be visited at least once each quarter. Second level of RDQA is conducted by the central M&E team (Yangon) at selected sites (1-2 townships) each quarter based on the weaknesses identified by the DQO. M&E plan include collection and analysis of data to understand how the project is affecting women and men and building capacity to integrate gender sensitivity. Tools and technical briefs will be share with implementing partners.

Support in malaria TSG meeting by CAP-Malaria Burma Regional/Country Technical Coordinator as secretariat, support joint monitoring and supervision visit with BHS will be continued in Year 5 and also, coordination with NMCP and country level support and coordination to cross border collaboration (development of bi annual work plan, implementation of twin city activities, sharing information between Twin-cities malaria working group) will be carried on in Year 5 to reduced service gaps across the countries.

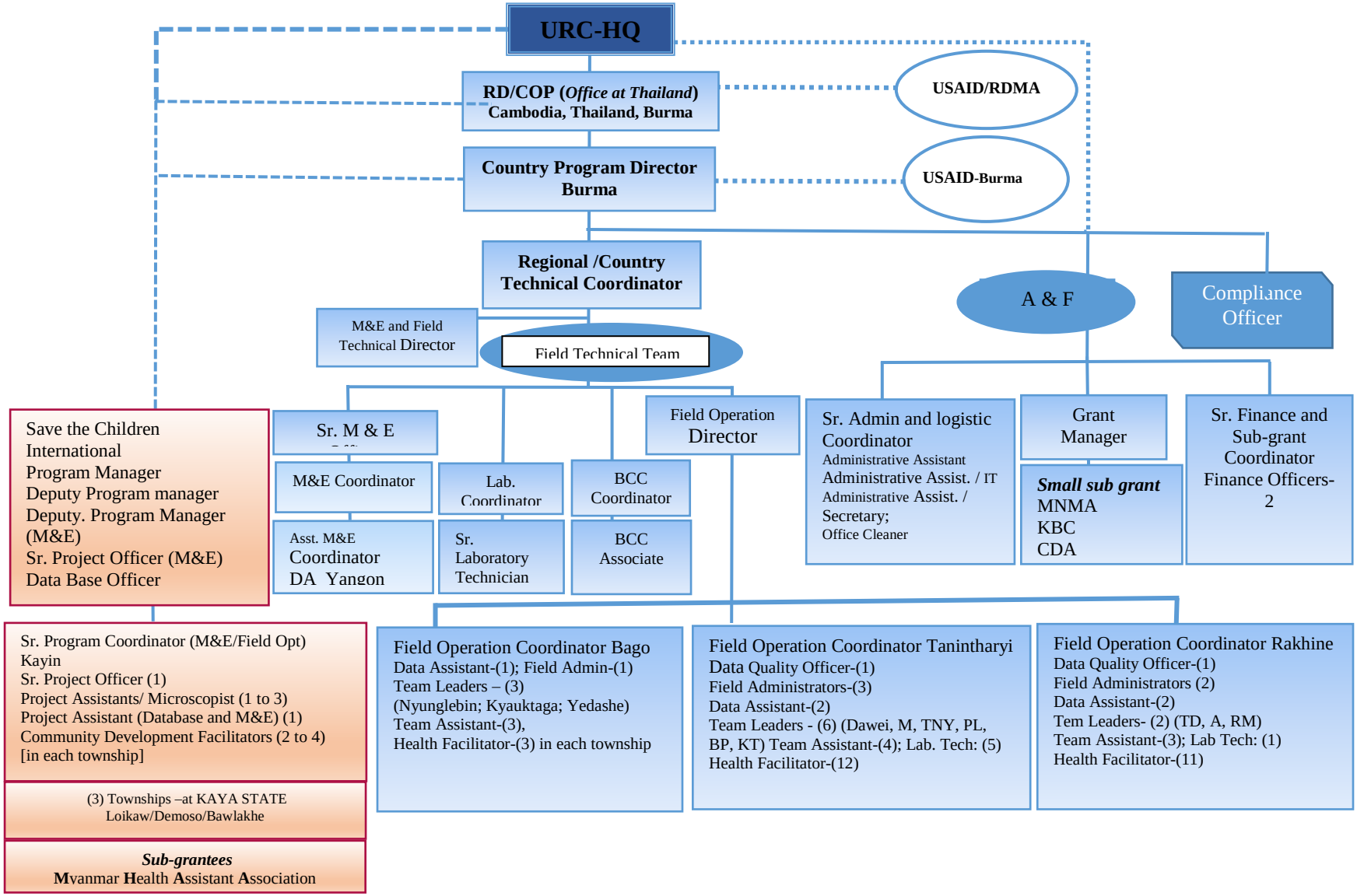
10 PROJECT MANAGEMENT AND STAFFING PLAN

CAP-Malaria management team continues in Year 5, with Dr. Darin Kongkasuriyachai, COP, providing leadership for the project, and supported by the Deputy COP, Mrs. Caroline Blair. The Burma Country Team is led by Dr. May Aung Lin and Dr. Saw Lwin in close collaboration and coordination with direct partners including SCI and MHAA. Short-term technical assistance will be used as appropriate. Plan for reducing the number of non-key (non-technical staff) and field level staffing to reflect phasing out of activities summarized below.

Position	Existing	Phase out by Quarter 3	Remaining staff to be phased out by Quarter 4
Drivers	4	0	4
Health Facilitators	25	25	0
Team Assistants	10	5	5
Microscopists	7	7	0
Data Assistants	6	6	0
Field Admins	6	0	6
Team Leaders	10	5	5
Data Quality Officers	2	2	0
Field Operation Coordinators	3	0	3
	73	50 (68%)	23 (32%)

CAP-MALARIA
CONTROL AND PREVENTION OF MALARIA

CAP-Malaria Burma Organogram of FY1



11 CAP-MALARIA EXIST STRATEGY – BURMA

As CAP-Malaria enters its final project year, the project will accelerate the exit strategy as outline in the Exit Plan to ensure sustainability of project. CAP-Malaria's exit strategy emphasizes local solutions and processes that include: mechanisms and criteria, measurable benchmarks, achievable timeline, action steps, responsible person/group, and means to assess progress. Throughout, CAP-Malaria's approach to implementation has involved close collaboration and integration with government and public sector programs.

12 ANNEX 1 – SUMMARY OF ACTIVITY MATRIX

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (Year 5)
IR 1: Use of preventive interventions among population increased in CAP-Malaria target areas								
B1.1 Community Level distribution of ITNs	a.	LLIN distribution (CAP-Malaria)	26 townships	113,000 LLINs distributed (URC -87,800; SCI – 20,000 (18,000 & disaster – 2,000); Disaster reserved -5,200)		-	-	113,000
	b.	Support NMCPs to distribute USG-LLIN (distribution cost)	22 Townships (NMCP/ USAID)	278,650 LLINs. Hire 4 short-term Field Assistants to manage distribution. Monitor by CAP-Malaria Staffs		-	-	278,650 LLINs
	c.	Monitoring on net coverage and net use	26 Townships	Monitoring tool revised	1	1	1	Quarterly in all townships
B 1.2 Community level promotion of ITN care and use	a.	IPC face to face by PPs, Mobile teams, VMWs	26 Townships (URC 25,000 / Q, SCI 10,000 / Q)	35, 000	35,000	35,000	30,000	135,000 *(people reached)*
	b.	Small Media						
		b.1 Distribution of pamphlets	26 townships	*Hire graphic designer for IEC production*	Distribution of pamphlets (100,000 by URC, 40,000 by SCI)			140,000 *distributed*
	c	Community Mobilization						
		c.1. Worksite HE by PP *(private sector engagement)*	Kawthoung, Bokpyin, Kyunsu, Myiek Dawei, Toungup, Hpa-an	7 advocacy meetings with private companies			Dissemination of findings at state/region level	7 meetings
				2,585 migrants	2,585 migrants	1,580 migrants		6,750 Migrants
		c.2. Trained Community - Help Group (CHG)	200 villages in Hpa-an, Hlaingbwe, Kawkareik, Myawaddy		CHG assembly and meeting on final exit			

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (FY16)
IR 2: Use of quality malaria diagnostics and appropriate treatment increased among malaria patients in areas with existing or threatened Artemisinin – resistant malaria.								
B. 2.1 Training on malaria diagnostic (RDT & microscopy) and case management	a	Training on diagnostics (microscopy or RDT)	23 townships (exclude Kayah and phase out villages)	850 VMWs/ 100 PPs (include 150 VMWs under SCI in Kayin)				23 Townships; 850 VMWs/ 100 PPs trained
	b	Training on case management, referral of severe cases						
B2.2 Supervision on QA of RDT and laboratory result strengthen	a.	Conduct quality check of RDT distributed to villages and HFs	1 township each from Rakhine and Bago, 3 Townships from Tanintharyi	Randomly collect RDTs from VMWs and HFs for QC check by DMR Lower Myanmar				
B2.3 Case management and investigation at the facility and community level	a.	EDAT by mobile teams and screening points	All project townships (29 Townships)	Case findings and management of uncomplicated malaria according to NTG				180,000
		EDAT by VMWs						
		EDAT by PPs						
	b.	Monthly VMW meeting, on-job training, monitoring and reporting	All project townships (29 Townships)	78 meetings	78 meetings	78 meetings	52 Meetings (36 monthly for 2 months)	286 meetings
		Monthly PP meeting, on-job training, monitoring and reporting		78 meetings	78 meetings	78 meetings	52 Meetings (36 monthly for 2 months)	286 meetings
	c.	Supervision and monitoring of VMWs on proper case management	26 Townships (not include Hpa-pun Kyainseikgyi, and Munaung)	156 village visits 2 villages per month per township	156 village visits 2 villages per month per township	156 village visits 2 villages per month per township	-	468 visits (URC 324 visits, SCI 126 visits)
		Supervision and monitoring of PPs on proper case management	26 Townships (not include Hpa-pun Kyainseikgyi, and Munaung)	78 PP visits 1 PP per month per township	78 PP visits 1 PP per month per township	78 PP visits 1 PP per month per township	-	234 visits (URC 171 visits, SCI 63 visits)

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (FY16)
	d.	Sub-grant follow-up activities (Continue activities up to end of contractual period).	3 Townships Kyarinseikgyi, Hpa-pun, Gwa	Case finding and management M&E			Final report	3 sub-grants

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (Y5)
IR 3: Use of strategic information for decision making increased at national and local levels.								
B3.1 CAP-Malaria survey and M&E activities	a.	End line household survey in new target areas	Tanintharyi Region, Rakhine State, Kayin State (3 Sampling Frames)	Developed and produced questionnaires, Hiring and training of data collectors, field data collection and monitoring, data compilation, entry and analysis			Findings analyzed and shared	3 Sampling Frames
	b.	Routine DQA by central M&E team	All project areas (26 townships exclude sub-grants)	1 visit (1-2 townships)	1 visit (1-2 townships)	1 visit (1-2 townships)	DQA reports	3 visits (3-6 townships)
		Routine DQA by DQOs		26 visits	26 visits	26 visits	26 visits	4 visits
	c.	CAP-Malaria online reporting system	Data from 26 townships	Monthly data collection from township level using online M&E format				1 *Online system*
B. 3.2 Coordination of strategic information at township and State/Region, and National levels	a	Support health system strengthening for strategic information						
	a.1	Support Malaria TSG meetings, and other technical meetings. Trainings support for staff and counterparts (including support to USAID trainings and meetings)	National	TSG quarterly reviews conducted. M&E activities as assigned to CAP-Malaria Technical meeting and PMI Partners' meeting quarterly and malaria related training cost supported to NMCP through USAID/Burma				8 meetings and 2 trainings
	a.2	Support joint monitoring and supervision visit (and mobile activities) with BHS	All project townships	Developed quarterly monitoring plan and schedule, Quarterly monitoring and supervision joint visits with BHS according to the supervision plan				63 *Quarterly joint visits in 21 townships*

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (Y5)
	a.3	Support lab QA/QC	8 township health facilities in 4 townships in Tanintharyi	Support lab QA/QC in 8 township HFs				8 *Township Hospitals under QA/QC*
	b.	Quarterly regular staffs meeting at central level	All target townships	Quarterly regular staffs meeting including one re-treat meeting				3 meetings
B3.3 Access increased to strategic information	a.	Up-dating of village based stratification in CAP-Malaria target areas	All project townships	Up-dating villages based malaria situation. Implement prevention packages according to strategy				1 *Village-based classification*
	b.	Monitoring stock out of first-line ACT and RDT at CAP-Malaria service delivery point	All VMWs	monthly monitoring on stock out of first-line ACT at service delivery points				Stock out <5%
	c.	Mobile Team Case Finding and Management in high malarious areas	60 villages in remote, hard to reach areas	Training on Mobile Team Case Finding and Management	60 villages	60 villages		120 Mobile Team Case Finding and Management sessions
	d.	Dissemination of information	Relevant stakeholders and public	Dissemination of semi-annual reports, gender analysis study report, survey reports/peer review publication and presentation				3 times
	f	Dissemination of exit strategy and discussion with NMCP at the national level	Two times at the national level with participants from all levels	1 time		1 time		2 times
	g	Gender Issue	Training on Gender assessment, Gender analysis, and Gender audit at all levels.	Consultants, Develop Training curriculum, SOPs, job aids and tools on Gender and counselling	Training on curriculum, SOPs, job aids and tools on Gender and counselling for (i) Medical Officer or Team Leader (URC & SCI) (ii) CAP-Malaria field staffs (Township level), These staff will provide trainings for VMW/PP			One TOT training in Yangon Six trainings at District level
	h	Compilation of entomological findings	8 sites of Tanintharyi and Rakhine	Data compilation, analysis and report writing				1 report

Indicator No.		Planned Activity	Geographic Areas	Milestones/Targets				
				Q1	Q 2	Q 3	Q 4	Target (FY16)
IR 4: Malaria control services for mobile populations strengthened through interagency and inter-country collaboration.								
B4.1 Enabling environment strengthened	a.	Respond to unforeseen local requests related malaria control	All project areas and areas which were requested by NMCP	Training and planning on disaster risk management	Development of work plan on disaster risk management including LLIN distribution (5,200)			
	b.	Advocacy meeting on Exit Strategy of CAP-Malaria Burma at the state/region, and township levels	4 State/Region level	4		4		8 *Local advocacy meetings*
			23 Township (exclude subgrant townships)		23			
B4.2 Country level support and coordination to increase cross border twin-city collaboration	a.	Country level support and coordination to cross border twin-city collaboration	*Ongoing*: Kawthaung-Ranong	Development of bi-annual work plan Implementation of twin city activities Twin-city malaria working group *e.g.* Share information, training, BCC, malaria week				3
	b.	Develop case study report on twin-cites workshops	Burma					1